AMENDMENTS TO THE CLAIMS:

1. (currently amended): A communication protocol processing unit formed by a multiprocessor comprising:

a queue memory for storing communication data and parameters used for an arithmetic process on the communication data;

a first processor for ~~performing a process in real-time on a stream of communication data and renewing process required parameters~~ receiving communication data on a data stream and performing an arithmetic process in real time on the received communication data by using parameters, and writing in the queue memory the received communication data paired with parameters updated by the arithmetic process; and

a second processor for ~~receiving data to be processed together with the renewed process required parameters, which are transferred from the first processor, and performing a process in non-real time for the data by referring to the renewed process required parameters,~~ periodically polling the queue memory and performing an arithmetic process in non-real time on the communication data written in the queue memory by using the paired, updated parameters

~~wherein the first processor transfers data paired with the renewed process required parameters to the second processor, and the second processor processes this data and renewed process required parameters providing a result to the first processor, thereby the second processor reduces the processing load of the first processor.~~

2. (currently amended): The communication protocol processing unit ~~formed by a multiprocessor~~ according to claim 1, wherein

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the ~~process-required~~ parameters ~~are~~ include state transitional information,

statistical information, or various setting information which is needed for [[a]] the arithmetic

process excluding the communication data, itself.

3.(cancelled)

4.(currently amended): The communication protocol processing unit ~~formed by a~~

~~multiprocessor~~ according to claim [[3]] 1, wherein

the first processor generates a processing demand signal for demanding the second processor

perform the non-real time arithmetic process ~~to the second processor~~,

before the first processor generates the processing demand signal, the communication data

and ~~process-required~~ the updated parameters are first unconditionally transferred to the queue

memory, and

the queue memory indicates validity or invalidity of the written communication data

according to presence or absence of the processing demand signal generated by the first

processor.

5. (currently amended): A communication protocol processing unit formed by a

multiprocessor comprising:

a queue memory for storing communication data and parameters used for an arithmetic

process on the communication data;

a plurality of first processors arranged in series to provide a pipeline-process ~~for performing~~

~~a process in real-time on a stream of communication data, and each of the plurality of first~~

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~~processors renewing process required parameters,~~ each first processor for receiving communication data on a data stream and performing an arithmetic process in real time on the received communication data by using parameters, and writing in the queue memory the received communication data paired with parameters updated by the arithmetic process; and

a second processor for ~~receiving data to be processed together with the renewed process required parameters,~~ periodically polling the queue memory and performing an arithmetic process in non-real time on the communication data written in the queue memory by using the paired, updated parameters

~~wherein the first processor transfers data paired with the renewed process required parameters to the second processor, and the second processor processes this data and renewed process required parameters providing a result to the first processor, thereby the second processor reduces the processing load of the first processor.~~

6. (currently amended): The communication protocol processing unit ~~formed by a multiprocessor~~ according to claim 5, ~~further comprising a queue provided between the first and second processors for storing a pair of the data to be processed and the renewed process required parameters~~ wherein

each of the plurality of first processors generates a processing demand for the second processor, and ~~forward~~ forwards the processing demand and ~~renewed process required~~ updated parameters to [[the]] a latter stage of the first processor, and the latter [[last]] stage of the first processor collectively transfers the processing demands to the queue memory.

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7. (currently amended):   The communication protocol processing unit ~~formed by a multiprocessor~~ according to claim 5, ~~further comprising:~~

~~a queue provided between the first and second processors for storing a pair of the data to be processed and the renewed process-required parameters,~~ wherein

each of the plurality of first processors generates a processing demand <u>signal</u> for <u>demanding</u> the second processor <u>perform the non-real time arithmetic process,</u> ~~and further transfers the data to be processed and the renewed process-required parameters~~

<u>before the first processor generates the processing demand signal, the communication data and updated parameters are first unconditionally transferred</u> to the queue <u>memory</u> ~~unconditionally,~~ and ~~thereafter~~

the queue <u>memory</u> ~~can judge independency~~ <u>indicates</u> validity [[/]] <u>or</u> invalidity of the <u>written communication</u> data ~~transferred to the queue~~ according to presence or absence of the processing ~~demands~~ <u>demand signal generated by the first processor.</u>

8.(currently amended):   The communication protocol processing unit ~~formed by a multiprocessor~~ according to claim 6, wherein

the processing demands and the ~~renewed process-required~~ <u>updated</u> parameters are structured so as to be accumulated in each of the plurality of first processors.

9.(currently amended):   The communication protocol processing unit ~~formed by a multiprocessor~~ according to claim 7, wherein the processing demands and the ~~renewed process-required~~ <u>updated</u> parameters are structured so as to be accumulated in each of the plurality of first processors.

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10.(currently amended). The communication protocol processing unit ~~formed by a multiprocessor~~ according to claim [[3]] 1, wherein

[[the]] data to be processed are directly transferred to the queue memory not via the first processor with reception of the communication data as an event.

11.(currently amended): The communication protocol processing unit ~~formed by a multiprocessor~~ according to claim 1, further comprising:

~~a queue for storing processing results of the second processor; and~~

a selection circuit for replacing the communication data on a stream with the processing results of the second processor, wherein

the first processor accesses to read the queue memory, and switches a selection route of the selection circuit to a side of the queue memory if the data are accumulated ~~in the queue~~.

12.(currently amended): The communication protocol processing unit ~~formed by a multiprocessor~~ according to claim 11, further comprising:

a register indicating whether or not data are accumulated in the queue memory for storing the processing results of the second processor; and

a readout control circuit for reading out the data accumulated in the queue memory,

wherein the first processor does not access the queue memory, and reads out a set status of the register, thereby recognizing a data accumulation of the queue memory, and

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wherein the readout control circuit is accessed when the data are accumulated, and reads out the data of the queue memory not via the first processor.

13.(currently amended):   The communication protocol processing unit ~~formed by a multiprocessor~~ according to claim 6,

wherein [[a]] timing for forwarding the processing demands and the ~~renewed process required~~ updated parameters by each of the plurality of first processors is taken with the next reception of the communication data as the event.

14.(currently amended):   The communication protocol processing unit ~~formed by a multiprocessor~~ according to claim 6, wherein [[the]] data to be processed are directly transferred to the queue memory not via the first processor with reception of the communication data as an event.

15.(currently amended):   The communication protocol processing unit ~~formed by a multiprocessor~~ according to claim 7, wherein [[the]] data to be processed are directly transferred to the queue memory not via the first processor with reception of the communication data as an event.

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